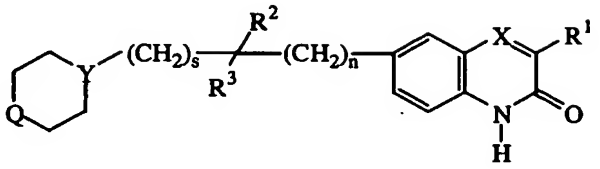
CLAIMS

1. A compound of formula (I),



(I)

the *N*-oxide forms, the addition salts and the stereo-chemically isomeric forms thereof, wherein

n is 0 or 1;
s is 0 or 1;

X is –N= or -CR^4=, wherein R^4 is hydrogen or taken together with R^1 may form a bivalent radical of formula -CH=CH-CH=CH-;

Y is –N< or –CH<;

Q is –NH-, -O-, -C(O)-, -CH_2-CH_2- or -CHR^5-,
wherein R^5 is hydrogen, hydroxy, C_{1-6}alkyl, arylC_{1-6}alkyl, C_{1-6}alkyloxycarbonyl, C_{1-6}alkyloxyC_{1-6}alkylamino or haloindazolyl;

R^1 is C_{1-6}alkyl or thienyl;

R^2 is hydrogen or taken together with R^3 may form =O;

R^3 is hydrogen, C_{1-6}alkyl or a radical selected from

- NR^6R^7 (a-1),
-O-H (a-2),
-O-R^8 (a-3),
-S- R^9 (a-4), or
—C≡N (a-5),

wherein

R^6 is –CHO, C_{1-6}alkyl, hydroxyC_{1-6}alkyl, C_{1-6}alkylcarbonyl, di(C_{1-6}alkyl)aminoC_{1-6}alkyl, C_{1-6}alkylcarbonylaminoC_{1-6}alkyl,

piperidinylC_{1-6}alkyl, piperidinylC_{1-6}alkylaminocarbonyl, C_{1-6}alkyloxy, C_{1-6}alkyloxyC_{1-6}alkyl, thienylC_{1-6}alkyl, pyrrolylC_{1-6}alkyl, arylC_{1-6}alkylpiperidinyl, arylcarbonylC_{1-6}alkyl, arylcarbonylpiperidinylC_{1-6}alkyl, haloindozolylpiperidinylC_{1-6}alkyl, or arylC_{1-6}alkyl(C_{1-6}alkyl)aminoC_{1-6}alkyl; and

R^7 is hydrogen or C_{1-6}alkyl;

R^8 is C_{1-6}alkyl, C_{1-6}alkylcarbonyl or di(C_{1-6}alkyl)aminoC_{1-6}alkyl; and

R^9 is di(C_{1-6}alkyl)aminoC_{1-6}alkyl;

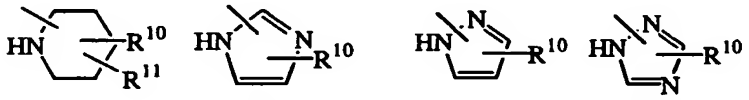
or R^3 is a group of formula

$-(CH_2)_t-Z-$ (b-1),

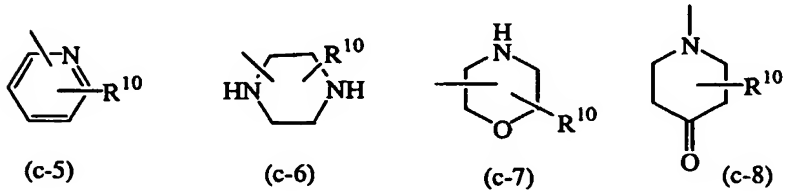
wherein

t is 0, 1 or 2;

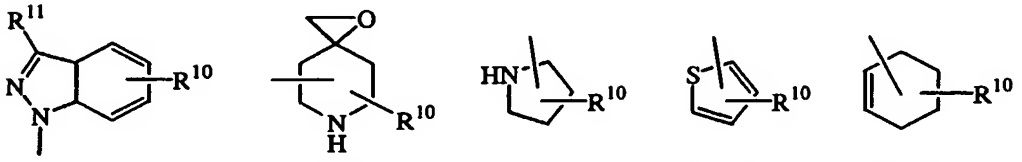
Z is a heterocyclic ring system selected from



(c-1) (c-2) (c-3) (c-4)

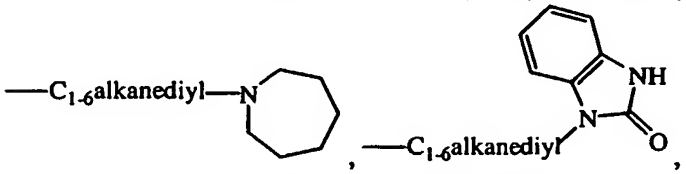


(c-5) (c-6) (c-7) (c-8)



(c-9) (c-10) (c-11) (c-12) (c-13)

wherein each R^{10} independently is hydrogen, C_{1-6}alkyl, aminocarbonyl, hydroxy,



C_{1-6}alkyloxyC_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkylamino, di(phenylC_{2-6}alkenyl), piperidinylC_{1-6}alkyl, C_{3-10}cycloalkyl, C_{3-10}cycloalkylC_{1-6}alkyl, aryloxy(hydroxy)C_{1-6}alkyl, haloindazolyl, arylC_{1-6}alkyl, arylC_{2-6}alkenyl, morpholino, C_{1-6}alkylimidazolyl, or pyridinylC_{1-6}alkylamino;

each R^{11} independently is hydrogen, hydroxy, piperidinyl or aryl;

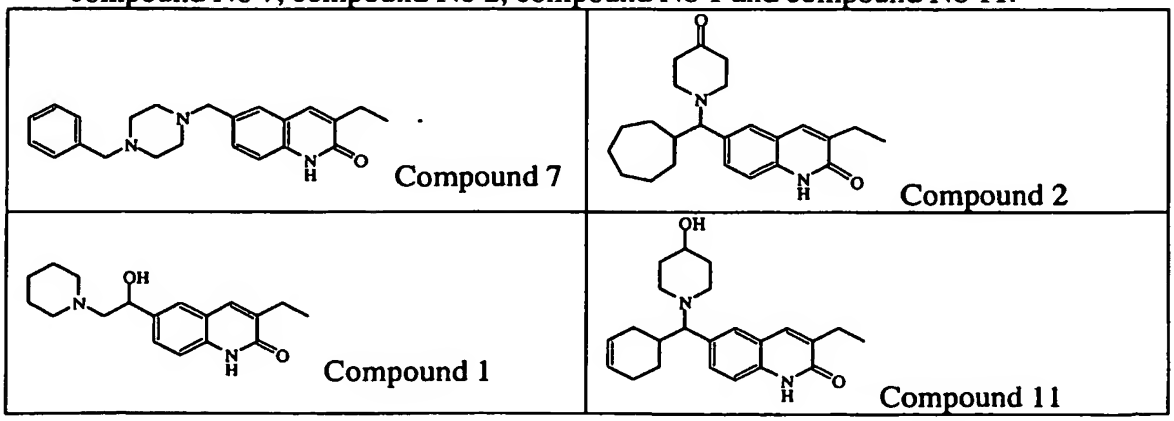
aryl is phenyl or phenyl substituted with halo, C_{1-6}alkyl or C_{1-6}alkyloxy;

with the proviso that 6-(cyclohexyl-1*H*-imidazol-1-ylmethyl)-3-methyl-2(1*H*)-quinoxalinone is not included.

2. A compound as claimed in claim 1 wherein X is –N= or -CH=; R^1 is C_{1-6}alkyl; R^3 is hydrogen, C_{1-6}alkyl, a radical selected from (a-1), (a-2), (a-3) or (a-4) or a group of formula (b-1); R^6 is di(C_{1-6}alkyl)aminoC_{1-6}alkyl or C_{1-6}alkyloxyC_{1-6}alkyl; R^7 is hydrogen; R^8 is di(C_{1-6}alkyl)aminoC_{1-6}alkyl; t is 0 or 2; Z is a heterocyclic ring system selected from (c-1), (c-5), (c-6), (c-8), (c-10), (c-12) or (c-13); each R^{10} independently is hydrogen, C_{1-6}alkyl, hydroxy, C_{1-6}alkyloxyC_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkylamino, morpholino, C_{1-6}alkylimidazolyl, or pyridinylC_{1-6}alkylamino; each R^{11}independently is hydrogen or hydroxy; and aryl is phenyl.

3. A compound according to claim 1 and 2 wherein n is 0; X is CH; Q is –NH-, $-CH_2-CH_2-$ or $-CHR^5-$, wherein R^5 is hydrogen, hydroxy, or arylC_{1-6}alkyl; R^1 is C_{1-6}alkyl; R^2 is hydrogen; R^3 is hydrogen, hydroxy or a group of formula (b-1); t is 0; Z is a heterocyclic ring system selected from (c-8) or (c-13); each R^{10} independently is hydrogen; and aryl is phenyl.

4. A compound according to claim 1, 2 and 3 wherein the compound is selected from compound No 7, compound No 2, compound No 1 and compound No 11.

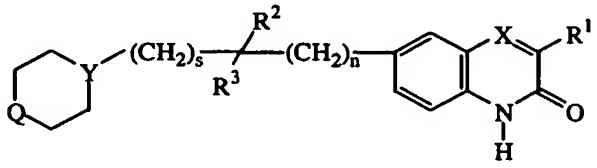


5. A compound as claimed in any of claims 1 to 4 for use as a medicine.

6. A pharmaceutical composition comprising pharmaceutically acceptable carriers and as an active ingredient a therapeutically effective amount of a compound as claimed in claim 1 to 4.

7. A process of preparing a pharmaceutical composition as claimed in claim 6 wherein the pharmaceutically acceptable carriers and a compound as claimed in claim 1 to 4 are intimately mixed.

8. Use of a compound for the manufacture of a medicament for the treatment of a PARP mediated disorder, wherein the compound is a compound of formula (I)



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—C≡N (a-5),

wherein

R^6 is –CHO, C_{1-6}alkyl, hydroxyC_{1-6}alkyl, C_{1-6}alkylcarbonyl, di(C_{1-6}alkyl)aminoC_{1-6}alkyl, C_{1-6}alkylcarbonylaminoC_{1-6}alkyl, piperidinylC_{1-6}alkyl, piperidinylC_{1-6}alkylaminocarbonyl, C_{1-6}alkyloxy, C_{1-6}alkyloxyC_{1-6}alkyl, thienylC_{1-6}alkyl, pyrrolylC_{1-6}alkyl, arylC_{1-6}alkylpiperidinyl, arylcarbonylC_{1-6}alkyl, arylcarbonylpiperidinylC_{1-6}alkyl, haloindozolylpiperidinylC_{1-6}alkyl, or arylC_{1-6}alkyl(C_{1-6}alkyl)aminoC_{1-6}alkyl; and

R^7 is hydrogen or C_{1-6}alkyl;

R^8 is C_{1-6}alkyl, C_{1-6}alkylcarbonyl or di(C_{1-6}alkyl)aminoC_{1-6}alkyl; and

R^9 is di(C_{1-6}alkyl)aminoC_{1-6}alkyl;

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wherein

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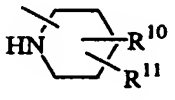
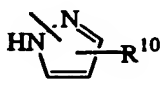
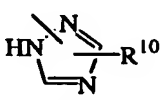
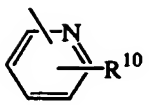
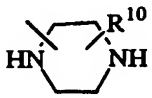

(c-1)


(c-2)


(c-3)


(c-4)


(c-5)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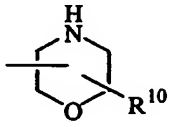
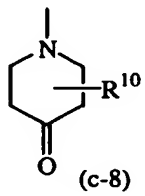
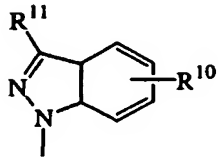
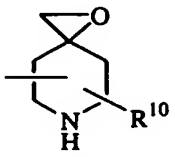
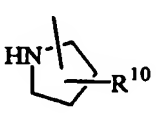
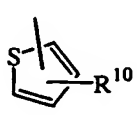

(c-7)

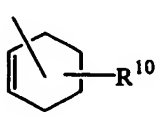

(c-8)


(c-9)

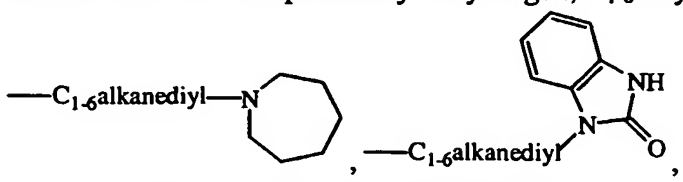

(c-10)


(c-11)


(c-12)


(c-13)

wherein each R^{10} independently is hydrogen, C_{1-6}alkyl, aminocarbonyl, hydroxy,



C_{1-6}alkyloxyC_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkylamino, di(phenylC_{2-6}alkenyl), piperidinylC_{1-6}alkyl, C_{3-10}cycloalkyl, C_{3-10}cycloalkylC_{1-6}alkyl, aryloxy(hydroxy)C_{1-6}alkyl, haloindazolyl, arylC_{1-6}alkyl, arylC_{2-6}alkenyl, morpholino, C_{1-6}alkylimidazolyl, or pyridinylC_{1-6}alkylamino;
each R^{11} independently is hydrogen, hydroxy, piperidinyl or aryl;

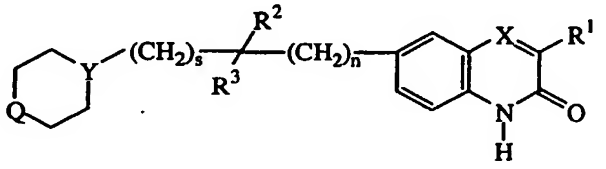
aryl is phenyl or phenyl substituted with halo, C_{1-6}alkyl, or C_{1-6}alkyloxy.

9. Use according to claim 8 of a PARP inhibitor of formula (I) for the manufacture of a medicament for the treatment of a PARP-1 mediated disorder

10. Use according to claim 8 and 9 wherein the treatment involves chemosensitization.

11. Use according to claims 8 and 9 wherein the treatment involves radiosensitization.

12. A combination of a compound with a chemotherapeutic agent wherein said compound is a compound of formula (I)



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R^2 is hydrogen or taken together with R^3 may form =O;

R^3 is hydrogen, C_{1-6}alkyl or a radical selected from

$-NR^6R^7$	(a-1),
-O-H	(a-2),
$-O-R^8$	(a-3),
$-S-R^9$	(a-4), or
—C≡N	(a-5),

wherein
R^6 is –CHO, C_{1-6}alkyl, hydroxyC_{1-6}alkyl, C_{1-6}alkylcarbonyl, di(C_{1-6}alkyl)aminoC_{1-6}alkyl, C_{1-6}alkylcarbonylaminoC_{1-6}alkyl, piperidinylC_{1-6}alkyl, piperidinylC_{1-6}alkylaminocarbonyl, C_{1-6}alkyloxy, C_{1-6}alkyloxyC_{1-6}alkyl, thienylC_{1-6}alkyl, pyrrolylC_{1-6}alkyl, arylC_{1-6}alkylpiperidinyl, arylcarbonylC_{1-6}alkyl, arylcarbonylpiperidinylC_{1-6}alkyl, haloindozolylpiperidinylC_{1-6}alkyl, or arylC_{1-6}alkyl(C_{1-6}alkyl)aminoC_{1-6}alkyl; and
R^7 is hydrogen or C_{1-6}alkyl;
R^8 is C_{1-6}alkyl, C_{1-6}alkylcarbonyl or di(C_{1-6}alkyl)aminoC_{1-6}alkyl; and
R^9 is di(C_{1-6}alkyl)aminoC_{1-6}alkyl;

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t is 0, 1 or 2;
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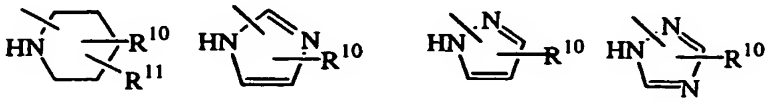
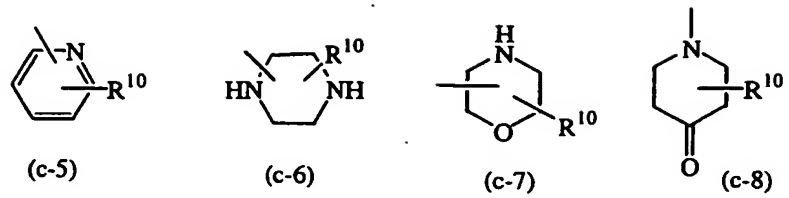


(c-1) (c-2) (c-3) (c-4)



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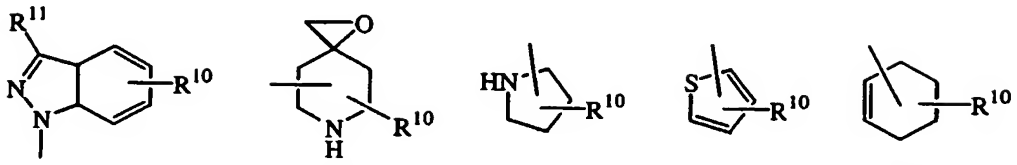

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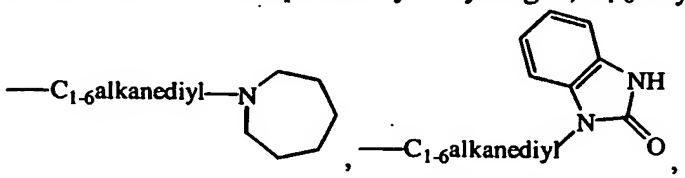


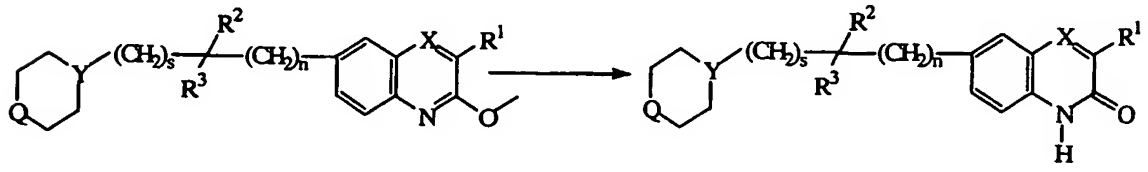
C_{1-6}alkyloxyC_{1-6}alkyl, C_{1-6}alkyloxyC_{1-6}alkylamino, di(phenylC_{2-6}alkenyl), piperidinylC_{1-6}alkyl, C_{3-10}cycloalkyl, C_{3-10}cycloalkylC_{1-6}alkyl, aryloxy(hydroxy)C_{1-6}alkyl, haloindazolyl, arylC_{1-6}alkyl, arylC_{2-6}alkenyl, morpholino, C_{1-6}alkylimidazolyl, or pyridinylC_{1-6}alkylamino;

each R^{11} independently is hydrogen, hydroxy, piperidinyl or aryl;

aryl is phenyl or phenyl substituted with halo, C_{1-6}alkyl or C_{1-6}alkyloxy.

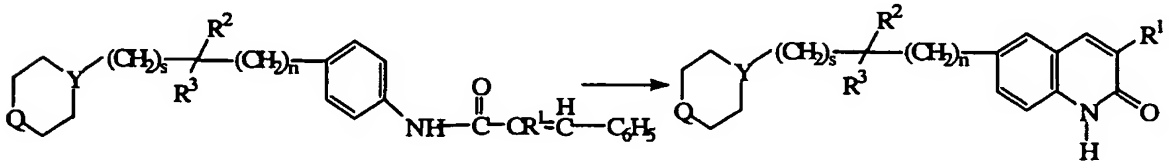
13. A process for preparing a compound as claimed in claim 1, characterized by

a) the hydrolysis of intermediates of formula (VIII), according to art-known methods, by submitting the intermediates of formula (VIII) to appropriate reagents, such as, tinchloride, acetic acid and hydrochloric acid, in the presence of a reaction inert solvent, e.g. tetrahydrofuran.



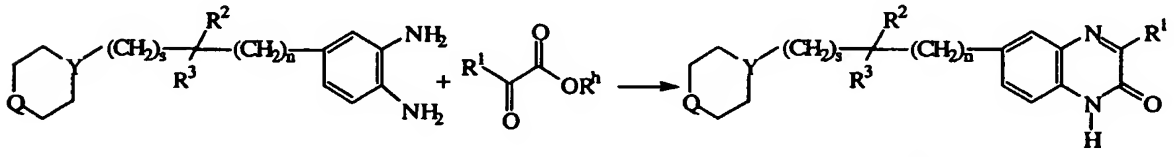
(VII I) (I)

b) the cyclization of intermediates of formula (X), according to art-known cyclizing procedures into compounds of formula (I) wherein X is CH herein referred to as compounds of formula (I-j), preferably in the presence of a suitable Lewis Acid, e.g. aluminum chloride either neat or in a suitable solvent such as, for example, an aromatic hydrocarbon, e.g. benzene, chlorobenzene, methylbenzene and the like; halogenated hydrocarbons, e.g. trichloromethane, tetrachloromethane and the like; an ether, e.g. tetrahydrofuran, 1,4-dioxane and the like or mixtures of such solvents.



(X) (I-j)

c) the condensation of an appropriate ortho-benzenediamine of formula (XI) with an ester of formula (XII) into compounds of formula (I), wherein X is N and R^2 taken together with R^3 forms =O, herein referred to as compounds of formula (I-a-1), in the presence of a carboxylic acid, e.g. acetic acid and the like, a mineral acid such as, for example hydrochloric acid, sulfuric acid, or a sulfonic acid such as, for example, methanesulfonic acid, benzenesulfonic acid, 4-methylbenzenesulfonic acid and the like.



(XI) (XII) (I-i)